Type: Poster Presentation

Final Abstract Number: 41.266
Session: Poster Session I
Date: Thursday, March 3, 2016
Time: 12:45-14:15
Room: Hall 3 (Posters & Exhibition)

Serotyping of invasive S. pneumoniae in adults, more than fifty years old, at a tertiary care center

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Background: The vast majority of the epidemiological data on the pneumococcal disease is largely available in the pediatric population; however there is limited data in adults from India. In the present study we evaluated antimicrobial susceptibilities testing (AST) and serotypes of pneumococcal isolates in adult population.

Methods & Materials: The study was a hospital based prospective observational study. Fifty consecutive *S. pneumoniae* isolates from patients ≥ 50 years with community acquired pneumococcal infections from various sites (invasive and non invasive) were included in the study. We performed antimicrobial susceptibility testing (AST) by disk diffusion and MIC testing by E-test and serotyping by Quellung anti-capsular serotyping on these isolates.

Results: AST showed 100% sensitivity to penicillin, ceftriaxone and vancomycin. Levofloxacin, co-trimoxazole, erythromycin and clindamycin showed sensitivity of 84%, 26%, 90% and 94%, respectively. There swas low prevalence of multi-drug-resistant *S. pneumoniae* (6%) observed in our study. Common serotypes identified were: 19A: (14%), 8: (10%), 19F: (8%); 3 and 9N: (6% each). Non-vaccine serotypes (NVS) comprised 30% of the isolates with no predominant serotypes. PCV7, PCV10, PCV13 and PCV23 vaccine coverage was observed as 16%, 24%, and 66% respectively. The invasive serotypes comprised 38% of the total isolates and 42.1% of these isolates were NVS.

Conclusion: Our study shows nil resistance of *S. pneumoniae* to penicillin and a low prevalence of MDR. On the contrary there was a high prevalence of resistance to co-trimoxazole and levofloxacin as compared to other asian countries. More importantly our study showed emergence of 19A serotype as the predominant serotype. There was also a poor coverage of currently available PCV13 (24%) and PPV23 (66%) pneumococcal vaccines in adults, and more importantly among invasive serotypes. In summary, our findings show that the current vaccines recommended for adult immunization program has modest efficacy in Indian population, especially in invasive infections. However PPV 23 vaccine appears to be the best option as on today but Indian data may throw challenges for the PPV23 pneumococcal vaccine. Therefore, continuous surveillance from different parts of India is needed for prudent use of *S. pneumoniae* vaccination.

http://dx.doi.org/10.1016/j.ijid.2016.02.453

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Trying to understand infections in transplant patients in a private hospital in Buenos Aires, Argentina

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Background: Since the first renal transplantation performed in Boston in 1954, solid organ transplantation became a common strategy against end-stage diseases. The German Hospital in Buenos Aires performed its first renal transplantation in 2000 and since then practice grew including also liver and heart transplantations. After 15 years it is time to evaluate the current infectious complications, aiming to discover useful variables to work on.

Methods & Materials: This analysis is a retrospective observational study, for which we have reviewed the medical records of all patients undergoing transplantation surgeries from 1-Jan-2014 to 31-Dec-2014. On an excel sheet we have analyzed information such as: age, gender, underlying disease, type of immune suppression, time of onset of the infectious event and type and source of microorganisms involved.

Results: Forty-six patients were transplanted during 2014, 33 (71.7%) of them had at least one infectious event. Median age was 55 (8-78, 70% between 31-65 years), 74% males. There was no difference between infected and not-infected regarding these 2 points. Organs transplanted: 2 hearts, 21 kidneys and 23 livers. Percentage of infections was similar in the different groups. Twenty-seven (33%) of infectious events were due to urinary tract infections, 19 of them in renal transplants (70%, p=0.02). CMV-reactivation was seen in 12 cases, 9 (75%) of them in liver-transplantations. Primary bacteremia was in third place (9, 13%) and surgical site infection in fourth (7, 10%). Low numbers prevent from calculating rates. Most of the infections (88%) showed up during the first 3 months, only 1 (3%) after 6 months. There was a wide range of microorganisms involved, 68% bacteria (70% GNB), 19% virus, 95 fungus and 4% TB. Regarding the storage fluid, 24% presented bacterial growth. There wasn't an increase incidence of infectious events in those in which the storage fluid was contaminated.

Conclusion: Urinary tract infection was the main complication as literature mentions. Surgical site infections were not prevalent in a particular group, which rules out inappropriate surgical technique. The variety of microorganisms involved rules out a common source. CMV prophylaxis strategy in hepatic transplant patients has to be reviewed.

http://dx.doi.org/10.1016/j.ijid.2016.02.454